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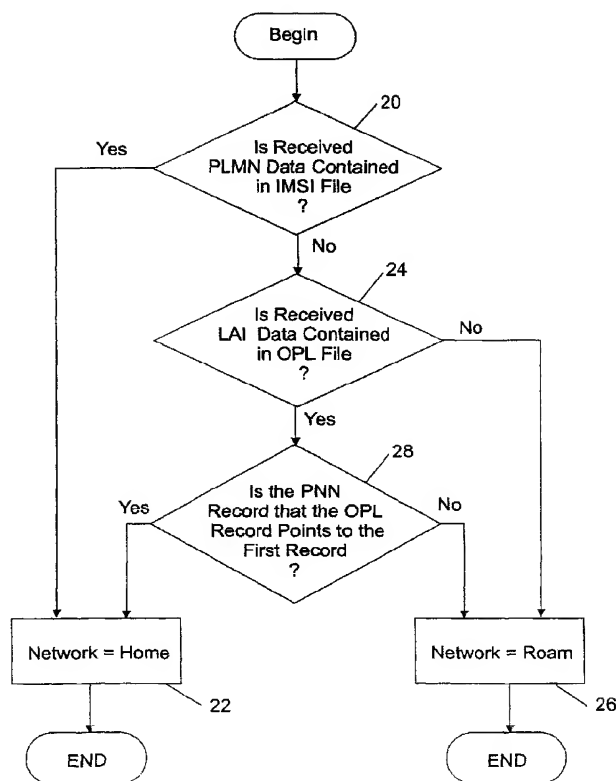
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[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR HOME NETWORK DETERMINATION IN A MOBILE PHONE



(57) Abstract: A system and method for determining if a mobile phone is in a home area that does not rely exclusively on the HPLMN data programmed into the mobile phone. To determine whether the mobile phone is in a home area or in a roaming area a processor in the mobile phone checks the PLMN control information in an over-the-air received signal. If the PLMN data matches the PLMN data stored in the mobile phone SIM card IMSI file, then the current network is a home network. Otherwise, the received LAI control data is checked to see whether it matches any LAI data in the OPL file of the SIM card in the mobile phone. If the received LAI data does not match any LAI data in the OPL file, then the network is not a home network but a roamed into network. If the received LAI data does match LAI data in the OPL file, then the OPL file is further examined to see whether the PNN record that the OPL record points to is the first record in the PNN file. If it is, then the network is a home network. If it is not, then the network is a roamed into network.



SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 734 980 A (HOOPER JEFF DUWAYNE ET AL) 31 March 1998 (1998-03-31) abstract; figure 3 column 12, line 57 -column 13, line 16 ----	1,5-7, 13,19
Y	WO 99 11085 A (NOKIA MOBILE PHONES LTD ;HALTIA JUHA (FI); ALI VEHMAS TIMO (FI); J) 4 March 1999 (1999-03-04) abstract; claims 1-3,7; figures 2,4 page 4, line 9 - line 21 ----- -/-	1,5-7, 13,19

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ETSI: "Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module-Mobile Equipment (SIM-ME) interface (3GPP TS 51.011 version 4.4.0 Release 4)" ETSI TS 151 011 V4.4.0 (2002-06), June 2002 (2002-06), pages 1-162, XP002270376 France page 58, paragraph 10.3.30 page 62, paragraph 10.3.35 -page 64, paragraph 10.3.38 page 66, paragraph 10.3.41 -page 68, paragraph 10.3.43 -----	1,7,13, 19
A	US 2002/082049 A1 (PRISE MICHAEL EDWARD) 27 June 2002 (2002-06-27) abstract; figure 5 page 2, paragraph 28 -page 3, paragraph 32 -----	1-24

INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5734980	A	31-03-1998	NONE	
WO 9911085	A	04-03-1999	FI 973456 A AU 8864998 A CN 1268278 T DE 69815023 D1 EP 0915631 A2 WO 9911085 A1 JP 2001514475 T US 6526267 B1	23-02-1999 16-03-1999 27-09-2000 03-07-2003 12-05-1999 04-03-1999 11-09-2001 25-02-2003
US 2002082049	A1	27-06-2002	NONE	